

Notice of Allowability

Application No.

09/697,389

Examiner

Hussein Akhavannik

Applicant(s)

FLORENT ET AL.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

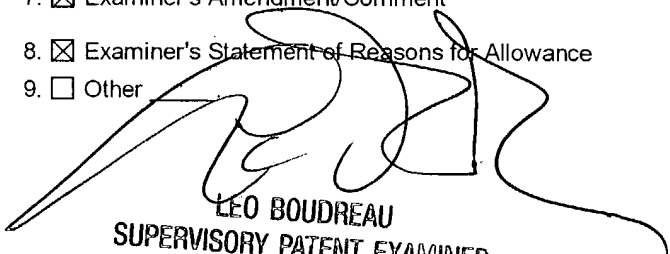
1. ☒ This communication is responsive to 6/30/2004.
2. ☒ The allowed claim(s) is/are 1 and 5-12.
3. ☒ The drawings filed on 06 April 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20040820.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other


LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2620

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert P. Michal (Reg. No. 35,614) on August 20, 2004.

The application has been amended as follows:

Replace claim 9 with:

Claim 9. A system comprising a suitably programmed computer of a workstation or a special purpose processor having circuit means, which are arranged to process image data according to an image processing method for noise filtering an image sequence representing a threadlike structure on a background, including an acquisition of point data in first and second sequence images and an estimation of the corresponding filtered point data for constructing a filtered second image, the point data being the intensities associated to co-ordinates of image points, and having means to display images processed according to said method, and possible means to store the image data, said system comprising:

- a means for extracting the threadlike structure points,
- a means for forming strings from said extracted points,

a means for temporally filtering the data of the points located outside the strings denoted as background points,

a means for spatially filtering the data of the string points,

a means for constructing the filtered second image data by performing an insertion of the spatially filtered data of the string points onto the temporally filtered data of the background points,

a means for providing a binary control signal, based on the string formation performed in said sequence images, formed of a list of the string points with their running number on the strings and their co-ordinates in the processed image, which determines whether the current point is a string point or a non-string point regarded as a background point,

a means for supplying said binary control signal for controlling the insertion of the spatially filtered data of the string points into the temporally filtered data of the background points, and

a means for delivering said binary control signal for controlling the insertion operation through a logic OR operation, whose inputs are first and second binary control signals related to the first and the second sequence images, said OR operation triggering the spatially filtered data when at least one of the first and second binary control signals corresponds to a string point.

Replace claim 11 with:

Claim 11. A computer program product embodied in a computer readable medium comprising a set of instructions for carryig out a method as claimed in claim 1.

Response to Amendment

2. The amendment to claim 1 overcomes the Examiner's objection cited in paragraph 4 of the previous office action (mailed 5/3/2004).
3. The amendment to claim 1 (which incorporates the limitations of cancelled claim 4) overcomes the Examiner's 35 U.S.C. 112, second paragraph rejection cited in paragraph 7 of the previous office action (mailed 5/3/2004).

Terminal Disclaimer

4. The terminal disclaimer filed on June 30, 2004 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 6,574,300 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

5. Claims 1 and 5-12 are allowed.
6. The following is an examiner's statement of reasons for allowance:

The closest cited prior art (Aufrichtig, R., Wilson, D.L.; X-ray Fluoroscopy Spatio-Temporal Filtering with Object Detection, Medical Imaging, IEEE Transactions on, Volume: 14 Issue: 4, Dec. 1995, Page(s): 733 –746) fails to teach or suggest the feature of delivering a binary control signal for controlling the insertion operation through a logic OR operation when at least one of the first and second binary control signals corresponds to the string point in view of the additional limitations recited in independent claim 1. Claims 5-12 are also allowed for the same reason as stated above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

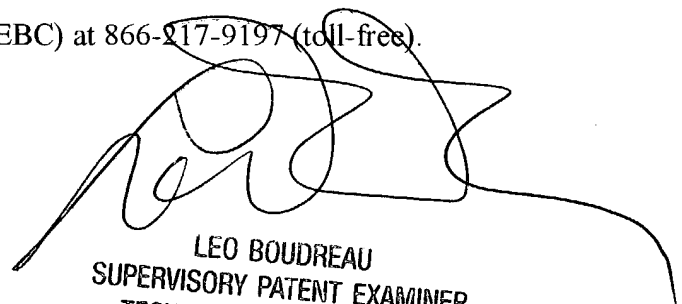
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein Akhavannik
August 20, 2004

HA.


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